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(71) Applicant(s):  
**Symbian Ltd**  
(Incorporated in the United Kingdom)  
2-6 Boundary Row, Southwark, LONDON,  
SE1 8HP, United Kingdom

(72) Inventor(s):  
**William Roberts**

(74) Agent and/or Address for Service:  
**Symbian Limited**  
Legal Department, 2-6 Boundary Row,  
Southwark, LONDON, SE1 8HP,  
United Kingdom

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**G06F 9/445**

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**G4A APX**

(56) Documents Cited:  
**GB 2354851 A** EP 0908817 A  
**US 6629123 B1** US 6442752 B1  
**US 6405316 B1**

(58) Field of Search:  
UK CL (Edition W ) **G4A**  
INT CL<sup>7</sup> **G06F**  
Other: Online: EPODOC, WPI, JAPIO

(54) Abstract Title: **Remapping component facilitating a link between an executable and a function held in an extension dynamic link library.**

(57) A remapping component is provided for facilitating a link between an executable and a function held in a new dynamic link library (DLL) in a computing device. The remapping component is provided with a relocation instruction arranged to update, upon loading, an export data table entry for the remapping component with the address location of the function in the new dynamic link library. In this way, the executable, when calling for the function at an address location in a known DLL, will automatically jump to the address location for the function in the new DLL. The additional subroutines usually associated with remapping DLLs can therefore be avoided, providing improved operation for the computing device.

**Step 1** Remapping component before Loading

A	export 1 = ?
A+1	export 2 = ?
A+2	export 3 = ?
<b>Relocations</b>	
<ul style="list-style-type: none"><li>Set A to be contents of export 3 in new.dll</li><li>Set A+1 to be contents of export 2 in new.dll</li><li>Set A+2 to be contents of export 7 in another.dll</li></ul>	

**Step 4** Execution Sequence

1000	call 1009
1009	jump to address in 1010
3027	<instructions to implement foo(>

**Step 2** Loading of executable, remapping component and new.dll

Executable	Remapping Component	new.dll
1000 call 1009	2000 export 1 = ?	3000 export 1 = 3019
1009 jump to address in 1010	2001 export 2 = ?	3001 export 2 = 3006
1010 data = ?	2002 export 3 = ?	3002 export 3 = 3027
set 1010 to be contents of export 1 in original.dll	set 2000 to be contents of export 3 in new.dll	3027 <instructions to implement foo(>

**Step 3** Complete the relocations

Executable	Remapping Component	new.dll
1000 call 1009	2000 export 1 = 3027	3000 export 1 = 3019
1009 jump to address in 1010	2001 export 2 = 3006	3001 export 2 = 3006
1010 data = 3027	2002 export 3 = 4011	3002 export 3 = 3027
		3027 <instructions to implement foo(>

Fig. 3.



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**Application No:** GB 0325146.9  
**Claims searched:** 1-9

**Examiner:** Dr Mark Shawcross  
**Date of search:** 22 March 2004

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance	
X	1-5 & 8-9	US 6629123 B1	(HUNT); col.3 line 59 to col.4 line 45 & col.10 lines 36-45
X	1, 4-5 & 8-9	US 6442752 B1	(JENNINGS et al.); abstract & col.4 line 17 to col.5 line 37 & fig.12
X	1 & 7-9	EP 0908817 A	(KABUSHIKI); paras [0009-0013] & figs 2-4
X	1 & 8-9	GB 2354851 A	(IBM); page 8 lines 5-29 & fig.1
A		US 6405316 B1	(KRISHMAN et al.); abstract, col.2 line 39 to col.3 line 15 & figs 2 & 3

### Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art
Y	Document indicating lack of inventive step if combined with one or more other documents of same category	P	Document published on or after the declared priority date but before the filing date of this invention
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application

### Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>W</sup>:

G4A

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

G06F

The following online and other databases have been used in the preparation of this search report:

Online: EPODOC, WPI, JAPIO